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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/579,192	08/16/2006	Hans-Heinrich Angermann	016906-0513	6692

22428 7590 09/08/2009

FOLEY AND LARDNER LLP
SUITE 500
3000 K STREET NW
WASHINGTON, DC 20007

EXAMINER	
DUONG, THO V	

ART UNIT	PAPER NUMBER
3744	

MAIL DATE	DELIVERY MODE
09/08/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/579,192	ANGERMANN, HANS-HEINRICH	
	Examiner	Art Unit	
	Tho v. Duong	3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08). Paper No(s)/Mail Date *8/11/09; 4/3/08 and 5/12/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

The disclosure is objected to because of the following: page 2 of the specification refers to the claims numbers and the subject matters in the claims. However, the claim numbers as well as their claimed subject matter are subjected to change.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1,5,7,8,9,12,13,15,16,17,18 and 19, the phrase "particular or preferably" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Regarding claims 16 and 17, the phrase "or the like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibagaki et al. (US 2003/0010480A1) in view of Ozawa Tatsuhisa (JP2002-295991A). Shibagaki discloses (figure 2) an apparatus for exchanging heat comprising a plurality of tubes (101) for a hot exhausted gas; a shell (102) surrounding the tube for engine coolant; a third and fourth manifold (106,107) define a first and second diffusor space; a first and second connecting piece at (106a,107a) allows the gas to flow in and out of the diffusor space; a third and fourth connecting piece (104,105) for feeding and discharging the coolant; header plates (103) prevents the gas and the coolant come into direct contact; the header plates, the tubes, the shell, the connecting pieces and the manifold are put together and then brazed. Shibagaki does not disclose that the brazing material of the inside connecting material, which in direct contact with the hot gas, and the brazing material of the outside connecting material, which is not in direct contact with the hot gas, is different such as the inside material is nickel or its alloy and the outside material is copper and its alloy. Ozawa Tatsuhisa discloses a manufacturing method for a heat exchanger that has the inside connecting material, which is in direct contact with a more corrosive fluid, is made of Nickel soldering material while the outside connecting material, which is not in direct contact with the corrosive fluid, is made of cheaper copper-nickel alloy for a purpose of making the heat exchanger with low cost and high security. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Oxawa Tatshushisa's teaching in Shibagaki's device for a purpose of making the heat exchanger with low cost and high security. Azawa further discloses that the brazing temperature is at the nickel soldering material such as BNi-5 system which is well within the claimed range 900-1300C.

Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibagaki et al. (US 2003/0010480A1) in view of Tetsu Kure et al. (CN 1305086). Shibagaki discloses (figure 2) an apparatus for exchanging heat comprising a plurality of tubes (101) for a hot exhausted gas; a shell (102) surrounding the tube for engine coolant; a third and fourth manifold (106,107) define a first and second diffusor space; a first and second connecting piece at (106a,107a) allows the gas to flow in and out of the diffusor space; a third and fourth connecting piece (104,105) for feeding and discharging the coolant; header plates (103) prevents the gas and the coolant come into direct contact; the header plates, the tubes, the shell, the connecting pieces and the manifold are put together and then brazed. Shibagaki does not disclose that the brazing material of the inside connecting material, which in direct contact with the hot gas, and the brazing material of the outside connecting material, which is not in direct contact with the hot gas, is different such as the inside material is nickel or its alloy and the outside material is copper and its alloy. Tetsu Kure discloses a manufacturing method for a heat exchanger that has nickel being used as a brazing material for the side that is in direct contact with a more corrosive fluid, and copper being used as a brazing material for the side that is not in direct contact with the more corrosive fluid for a purpose of making the heat exchanger with low cost. Tetsu further discloses that the brazing temperature of the heat exchanger is between 900-1300 degrees. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Tetsu Kure's teaching in Shibagaki's device for a purpose of making the heat exchanger with low cost.

Claims 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibagaki and Tetsu as applied to claim 18 above, and further in view of Evans et al. (US 6,076,727). Shibagaki and Tetsu substantially disclose all of applicant's claimed invention as discussed above except for the limitation that the heat exchanger is moved through at least one heated zone by means of a conveyor mechanism and the joining process takes place under a shielding gas atmosphere. Evans discloses (figure 4 and column 4, lines 18-22) a brazing method that includes a step of moving the heat exchanger through a furnace by a conveyor, wherein the joining process takes place under a nitrogen gas atmosphere for a purpose of preventing any oxidation during the brazing process and the heat exchanger can be easily moved from one place to another place. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Evan's teaching in the combination device of Shibagaki and Tetsu/ Ozawa Tatsuhisa for a purpose of preventing any oxidation during the brazing process and the heat exchanger can be easily moved from one place to another place.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ayres (US 6,904,961) discloses a prime surface gas cooler for high temperature.

Laudic et al. (US 6,543,675) discloses a method for soldering an exhaust gas heat exchanger.

Inaba (US 6,257,483) discloses a nickel based brazing material.

Hasegawa et al. (US 6,129,143) discloses a brazing sheet having excellent corrosion resistance.

Zawierucha (US 4,473,110) discloses a corrosion protected reversing heat exchanger.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tho v. Duong whose telephone number is 571-272-4793. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tyler J. Cheryl can be reached on 571-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tho v Duong/
Primary Examiner, Art Unit 3744